PATENT APPLICATION

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re application of)
Applicant: Stern et al.)
Title: Bacteriocins and Novel Bacterial Strains)) Group Art Unit:) Examiner:
Serial No.:))
Docket No.: 0135.03)
Filed:))
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DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. 1.56

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

In compliance with 37 C.F.R. 1.56 Applicants herewith submit documents believed to be relevant to the above-identified patent application. The documents are listed on form PTO-1449 attached hereto. A copy of each document, not including a U.S. Patent, is enclosed.

This Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; or (iii) the above information constitutes prior art in the subject invention.

REFERENCES

- 1. U.S. Patent No. 5,733,568, Ford, March 31, 1998.
- 2. U.S. Patent No. 6,403,082, Stiles et al., Jun. 11, 2002.
- 3. Joosten, H., et al., "Purification and Characterization of Enterocin 4, a Bacteriocin Produced by Enterococcus faecalis INIA 4", Applied and Environmental Microbiology, Vol. 62 (11), pp. 4220-4223, Nov. 1996.
- 4. Maisnier-Patin, S., et al., "Purification, Partial Characterisation and Mode of Action of Enterococcin EFS2, an Antilisterial Bacteriocin Produced by a Strain of Enterococcus faecalis Isolated from a Cheese", <u>International</u> Journal of Food Microbiology, Vol. 30, pp. 255-270, 1996.
- 5. Balla, E., et al., "Characterization and Cloning of the Genes Encoding Enterocin 1071A and Enterocin 1071B, Two Antimicrobial Peptides Produced by Enterococcus faecalis BFE 1071", Applied and Environ. Micro., Vol. 66, (4), pp. 1298-1304, April 2000.
- 6. Franz, C., et al., "Biochemical and Genetic Characterization of the Two-Peptide Bacteriocin Enterocin 1071 Produced by Enterococcus faecalis FAIR-E 309", Applied and Environmental Microbiology, Vol. 68, (5), pp. 2550-2554, May 2002.
- 7. Nilsen, T., et al., "Enterolysin A, a Cell Wall-Degrading Bacteriocin from Enterococcus faecalis LMG 2333", Applied and Environmental Microbiology, Vol. 69, (5), pp. 2975-2984, May 2003.
- 8. Guyonnet, D., et al., "Method for Rapid Purification of Class IIa Bacteriocins and Comparison of Their Activities", <u>Applied and Environmental Microbiology</u>, Vol. 66, (4), pp. 1744-1748, April 2000.
- Juven, B., et al., "Antagonistic effects of lactobacilli and pediococci to control intestinal colonization by human enteropathogens in live poultry", <u>Journal of Applied</u> <u>Bacteriology</u>, Vol. 70, pp. 95-103, 1991.
- 10. Moreno, M. et al., "Isolation and biochemical characterisation of enterocins produced by enterococci from different sources", Abstract, <u>Journal of Applied</u> <u>Microbiology</u>, Vol. 94, (2), Page 214, February 2003.

- 11. Laukova, A., et al., "Occurrence of bacteriocin production among environmental entrococci", Medline Abstract-<u>Lett Appl Microbiol</u>, Vol. 27, (3), pp. 178-82, September 1,1998.
- 12. Lopez-Lara, I., et al., "Purification, characterization, and biological effects of a second bacteriocin from Enterococcus faecalis ssp. liquefaciens S-48 and it mutant strain B-48-28", Medline Abstract, <u>Can J Microbiol</u>, Vol. 37, (10), pp. 769-74, October 1, 1991.
- 13. Rodriguez, J., et al., "Bactericidal effect of enterocin 4 on Listeria monocytogenes in a model dairy system", Medline Abstract, <u>J Food Prot</u>, Vol. 60, (1), pp. 28-32, Jan. 1, 1997
- 14. Nunez, M., et al., "Inhibition of Listeria monocytogenes by enterocin 4 during the manufacture and ripening of Manchego cheese", Medline Abstract, <u>J Appl Microbiol</u>, Vol. 83, (6), pp. 671-7, December 1, 1997.
- 15. Rodriguez, E., et al., "Combined effect of bacteriocinproducing lactic acid bacteria and lactoperoxidase system
 activation on Listeria monocytogenes in refrigerated raw
 milk", Medline Abstract, <u>J Appl Microbiol</u>, Vol. 83, (3), pp.
 389-95, September 1, 1997.
- 16. Jett, B., et al., "The growth-inhibitory effect of the Enterococcus faecalis bacteriocin encoded by pAD1 extends to the oral streptococci", Article, <u>Journal of Dental Research</u>, Vol. 69, pp. 1640-1645, 1990.
- 17. Du Toit, M., et al., "Preliminary characterization of bacteriocins produced by *Enterococcus faecium* and *Enterococcus faecalis* isolated from pig feces", Abstract, <u>Journal of Applied Microbiology</u>, Vol. 88, (3), p. 482, March 2000.
- 18. Marekova, M., et al., "Partial characterization of bateriocins produced by environmental strain *Enterococcus faecium* EK13", Abstract, <u>Journal of Applied Microbiology</u>, Vol. 94, (3), p. 523, March 2003.
- 19. Simonetta, A., et al., "Antibacterial activity of enterococci strains against Vibrio cholerae", Medline Abstract, Lett Appl Microbiol, Vol. 24, (2), pp. 139-43, February 1, 1997.
- 20. Lasagno, M., et al., "Selection of bacteriocin producer strains of lactic acid bacteria from a dairy environment", Medline Abstract, <u>New Microbiol</u>, Vol. 25, (1), pp. 37-44, January 1, 2002.

- 21. Del Campo, R., et al., "Bacteriocin Production in Vancomycin-Resistant and Vancomycin-Susceptible Enterococcus Isolates of Different Origins", Abstract, <u>Antimicrobial</u> <u>Agents and Chemotherapy</u>, Vol. 45, (3), pp. 905-912, March 2001.
- 22. Galvez, A., et al., "Isolation and characterization of enterocin EJ97, a bacteriocin produced by *Enterococcus* faecalis EJ97", Abstract, <u>Arch Microbiol</u>, Vol. 171, pp. 59-65, 1998.
- 23. Eguchi, T., "Isolation and characterization of enterocin SE-K4 produced by thermophilic enterococci, Enterococcus faecalis K-4", Medline Abstract, <u>Biosci Biotechnol Biochem</u>, Vol. 65, (2), pp. 247-53, February 1, 2001.
- 24. Lopez-Lara, I., et al., "Purification, characterization, and biological effects of a second bacteriocin from Enterococcus faecalis ssp. liquefaciens S-48 and its mutant strain B-48-28", Medline Abstract, <u>Can J Microbiol</u>, Vol. 37, (10), pp. 769-74, October 1, 1991.
- 25. Salzano, G., et al., "Conjugal transfer of plasmid-borne bacteriocin production in Enterococcus faecalis 226 NWC", FEMS Microbiol Lett, Vol. 78, (1), pp. 1-6, Nov. 15, 1992.
- 26. Elotmani, F., et al., "Characterization of anti-Listeria monocytogenes bacteriocins from Enterococcus faecalis, Enterococcus faecium, and Lactococcus lactis strains isolated from Ra?b, a Moroccan traditional fermented milk", Curr Microbiol, Vol. 44, (1), pp. 10-7, January 1, 2002.

Respectfully submitted,

Juguet 20, 2013

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Enclosures PTO-1449 (3 sheets) 26 References

cc:

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N. Stern

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	Juven, B., et al., "Antagonistic effects of lactobacilli and pediococci to control intestinal colonization by human enteropathogens in live poultry", <u>Journal of Applied</u> <u>Bacteriology</u> , Vol. 70, pp. 95-103, 1991.																	
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28", Medline Abstract-Can J Microbiol, Vol. 37, (10), pp.

Listeria monocytogenes in a model dairy system", Medline Abstract-<u>J Food Prot</u>, Vol. 60, (1), pp. 28-32, Jan. 1, 1997

Rodriguez, J., et al., "Bactericidal effect of enterocin 4 on

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	Nunez, M., et al., "Inhibition of Listeria monocytogenes by enterocin 4 during the manufacture and ripening of Manchego cheese", Medline Abstract- <u>J Appl Microbiol</u> , Vol. 83, (6), pp. 671-7, December 1, 1997.												
	Rodriguez, E., et al., "Combined effect of bacteriocin- producing lactic acid bacteria and lactoperoxidase system activation on Listeria monocytogenes in refrigerated raw milk", Medline Abstract- <u>J Appl Microbiol</u> , Vol. 83, (3), pp. 389-95, September 1, 1997.												
	Jett, B., et al., "The growth-inhibitory effect of the Enterococcus faecalis bacteriocin encoded by pAD1 extends to the oral streptococci", Article, <u>Journal of Dental Research</u> , Vol. 69, pp. 1640-1645, 1990.												
	Du Toit, M., et al., "Preliminary characterization of bacteriocins produced by Enterococcus faecium and Enterococcus faecalis isolated from pig feces", Abstract, Journal of Applied Microbiology, Vol. 88, (3), p. 482, March 2000.												
	Marekova, M., et al., "Partial characterization of bacteriocins produced by environmental strain <i>Enterococcus faecium</i> EK13", Abstract, <u>Journal of Applied Microbiology</u> , Vol. 94, (3), p. 523, March 2003.												
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